

SEP 24 1985

RSB

MEMORANDUM FOR:

J. Crews, RV  
A. Chaffee, RV  
L. Miller, RV  
A. Hon, RV  
C. Sorensen, RV  
R. Zimmerman, RV  
G. Hernandez, RV  
G. Fiorelli, RV  
C. Bosted, RV  
J. Ball, RV  
R. Scarano, RV  
G. Knighton, AD/L:NRR  
E. Licitra, Project Manager, NRR  
M. Ley, Project Manager, NRR  
D. Schaefer, RV  
C. Sherman, RV  
R. Fish, RV  
P. Qualls, RV

FROM:

D. Kirsch, Acting Director  
Division of Reactor Safety and Projects, RV

SUBJECT:

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE (SALP)  
FOR PALO VERDE (Period April 1, 1984 through  
September 30, 1985)

References:

- (1) NRC Manual Chapter 0516
- (2) Proposed changes to the SALP process, J. M. Taylor  
Memorandum dated June 27, 1985
- (3) Region V Instruction 0701
- (4) SALP Board Schedule, J. B. Martin Memorandum dated  
August 22, 1985

Pursuant to references (1), (2), (3) and (4) above, the regional SALP Review Board meeting for Palo Verde is scheduled to convene at the Region V Walnut Creek office on November 6, 1985, at 8:30 a.m. The board members will consist of the above addressees and myself who will serve as chairperson.

This assessment will cover the 18 month period from April 1, 1984 through September 1985. The evaluation period will include recent events through September 1985.

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Members of the Palo Verde SALP Board are herewith provided a review guidance package to be used in preparing performance analyses of the various functional areas. This package consists of the following:

- ° Description of functional areas (Attachment 1)
- ° Evaluation criteria (Attachment 2)
- ° Attributes for the evaluation criteria (Attachment 3)
- ° Performance categories (Attachment 4)
- ° SALP evaluation matrix (Attachment 5)
- ° Sample SALP functional area performance analysis (Attachment 6)

Supporting data and summaries is under preparation and will be distributed to the SALP Board Members by October 4, 1985.

The following is the anticipated outline of the Palo Verde SALP report, along with the individuals assigned lead responsibility for preparing input for each section.

I. Introduction	Hon
II. Criteria	Hon
III. Summary of Results	Hon
IV. Performance Analysis	
1. Plant Operations	Zimmerman
2. Radiological Controls	Sherman
3. Maintenance	Zimmerman
4. Surveillance	Zimmerman
5. Fire Protection	Qualls
6. Emergency Preparedness	Fish
7. Security and Safeguards	Schaefer
8. Refueling	N/A
9. Quality Programs and Administrative Controls Affecting Safety	Zimmerman
10. Licensing Activities	Licitra
11. Training	Zimmerman
12. Containment Safety-Related Structures and Major Steel Supports	Hernandez
13. Piping System and Supports	Hernandez
14. Safety-Related Components - Mechanical	Hernandez
15. Auxiliary System	Hernandez
16. Electrical Equipment and Cables	Hernandez
17. Instrumentation	Hernandez
18. Preoperational Testing	Fiorelli
19. Startup Testing	Bosted
V. Supporting Data and Summaries (Including tables)	Hon

Each person assigned lead responsibility for a functional area shall prepare a performance analysis and submit it to A. Hon by C.O.B. October 10, 1985. Each performance analysis shall be prepared as follows:

1. Assess the licensee's performance in the functional area based upon inspections performed, available data and observations of the licensee's performance during the SALP period. Obtain inputs from others who had inspection responsibilities in the functional area. In assessing the licensee's performance, use the guidance in Attachment 1 through 4.
2. Prepare a performance analysis for the functional area following the format of Attachment 6. If possible, discuss the trend of the licensee's performance since the previous SALP period. The analysis should reference pertinent data, enforcement items or events, when appropriate, but should be principally a quantitative analysis of the licensee's performance in the area (depending upon the level of activity, approximately one to one and one-half page in length when single space typed).
3. Include recommendations for licensee actions related to the functional area.
4. Provide a copy of the SALP evaluation matrix (Attachment 5), assigning a performance category for each evaluation criterion.

By copy of this memorandum, the Director, Office of Investigations, San Francisco Field Office, is requested to provide a summary of major investigative activities and results involving Palo Verde, by October 10, 1985.

In addition, by copy of this memorandum, the offices of NMSS and AEOD are requested to provide performance analyses by October 10, 1985 (or updated earlier submittals to address the extended SALP period).

Original signed by  
D. F. Kirsch                      D. F. Kirsch  
SALP Board Chairman  
Acting Director, Division of Reactor  
Safety and Projects

Enclosures: As Stated

cc: J. Davis, NMSS  
R. Seyfrit, AEOD  
O. Shackleton, OI/SFFO  
R. Scarano, RV

bcc: RSB/Document Control Desk (RIDS)

Mr. J. Martin, Mr. B. Faulkenberry, G. Cook, Resident Inspector

RV *[Signature]*  
AHon:dh  
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DKirsch  
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## Functional Areas

### 1. Plant Operations

Consists chiefly of the activities of the licensee's operational staff (e.g., licensed operators, shift technical advisors, and auxiliary operators). It is intended to be limited to operating activities such as plant startup, power operation, plant shutdown, and system lineups. Thus, it includes activities such as reading and logging plant conditions; responding to off-normal conditions; manipulating the reactor and auxiliary controls; training/retraining of licensed operators, shift technical advisors, and auxiliary operators.

### 2. Radiological Controls

Includes controls for occupational radiation protection; radioactive materials and contamination controls; radiological surveys and monitoring; processing of gaseous, liquid, and solid wastes; transportation of radioactive materials; radiological effluent and environmental monitoring; and the results of the NRC's independent measurement program.

### 3. Maintenance

Includes all activities associated with preventive or corrective maintenance of instrumentation and control equipment and mechanical and electrical systems.

### 4. Surveillance

Includes all surveillance testing activities as well as all inservice inspection and testing activities. Examples of activities included are: instrument calibrations, equipment operability tests, containment leak rate tests, special tests, inservice inspection and performance tests of pumps and valves, and all other inservice inspection activities.

### 5. Fire Protection

Includes routine housekeeping and fire protection/prevention program activities. Thus, it includes the storage of combustible material; fire brigade staffing and training; fire suppression system maintenance and operation; and those fire protection features provided for structures, systems, and components important to safe shutdown.

### 6. Emergency Preparedness

Includes activities relating to the implementation of the emergency plan and implementing procedures. Thus, it includes such activities as licensee's performance during exercises which test the licensee, state, and local emergency plans; plan administration and implementation; notification; communications; facilities and equipment; staffing; training; assessment; emergency classification; medical treatment; radiological exposure control; recovery; protective actions; and interfaces with onsite and offsite emergency response organizations.

7. Security

Includes all activities whose purpose is to ensure the security and continued operability of the plant. Specifically it includes all aspects of the licensee's security program (e.g., access control, security checks, badging).

8. Refueling

Includes all activities associated with refueling. Thus, it includes outage management, and the manipulation of new and spent fuel.

9. Quality Programs and Administrative Controls Affecting Quality

Includes all verification and oversight activities which affect or assure the quality of plant activities, structures, systems and components. This area may be viewed as a comprehensive management system for controlling the quality of work performed as well as the quality of verification activities that confirm that the work was performed correctly. The evaluation of the effectiveness of the quality assurance system should be based on the results of management actions to ensure that necessary people, procedures, facilities and materials are provided and used during the operation of the nuclear power plant. Principal emphasis should be given to evaluating the effectiveness and involvement of management in establishing and assuring the effective implementation of the quality assurance program along with evaluating the history of licensee performance in the key areas of: committee activities, design and procurement control, control of design change processes, inspections, audits, corrective action systems, and records.

10. Licensing Activities

Includes all activities supporting the NRC review of the application for and the issuance of the Construction Permit and Operating License, and amendments. In addition, includes the adequacy and timeliness of all licensing submittals, responsiveness to NRC licensing initiatives, and the licensee's approach to resolution of technical issues from a safety standpoint.

11. Training

Includes the following facility training categories:

- Non-licensed operators
- Control room operators
- Senior control room operators/shift supervisors
- Shift Technical advisors
- Instrument and control technicians
- Electrical maintenance personnel
- Mechanical maintenance personnel
- Radiological protection technicians
- Chemistry technicians
- Onsite technical staff and managers

12. Containment, Safety-Related Structures, and Major Steel Supports

Includes all activities related to the structural concrete and steel used in the containment (including the basemat) and safety-related structures, and major steel equipment supports. It includes all aspects of structural concrete (e.g., reinforcing steel; concrete batching, delivery, placement, in-process testing, and curing; liner plate erection and fabrication; and containment post-tensioning), structural steel used in safety-related structures (welded and bolted), and major steel equipment supports (for reactor vessel, reactor coolant pumps, steam generators, pressurizer, polar crane, tanks, heat exchangers, etc.).

13. Piping Systems and Supports

Includes those safety-related piping systems described in 10 CFR 50.2(v) and R.G. 1.26, quality groups A, B and C. It is intended to be limited to the primary pressure boundary and other safety-related water, steam and radioactive waste containment piping systems. It includes those quality checks necessary to ensure compliance with the applicable codes and other requirements specified in the SAR for these systems. The primary inspection emphasis in this area is on piping systems and their supports/restraints.

14. Safety-Related Components - Mechanical

Covers mechanical components such as pressure vessels, pumps, and valves located in, and attached to, the piping systems described in 3 above. The primary emphasis here is on components rather than piping.

15. Auxiliary Systems

Includes those safety-related auxiliary systems included in the nuclear facility which are essential for the safe shutdown of the plant or the protection of the health and safety of the public. Included here are systems such as HVAC, radwaste, fire protection and fuel storage and handling.

16. Electrical Equipment and Cables

Includes safety-related electrical components, cables and associated items used in the electrical systems of the plant, such as: motors, transformers, batteries, emergency diesel generators, motor control centers, switchgear, electric raceways, cable (power, control, and instrument), circuit breakers, relays, and other interrupting and protective devices.

17. Instrumentation

Covers safety-related instrument components and systems that are designed to measure, transmit, display, record and/or control various plant variables and conditions. The Reactor Protection System and the Engineered Safety Features Actuation System are two plant systems utilizing such devices as: sensors, transmitters, signal conditioners,



controllers and other actuating devices, recorders, alarms, logic devices, instrument air supplies, racks, and panels.

18. Preoperational Testing

Covers the preparation, conduct, and evaluation of test results for preoperational tests performed by or under the direction of the licensee's staff to demonstrate the proper functioning and conformance to design requirements of components, systems, and structures.

19. Startup Testing

Covers the preparation, conduct, and evaluation of test results for testing conducted following the issuance of the operating license. It starts with initial fuel loading and precritical tests, and continues until the plant reaches commercial operating status at or near its licensed power rating.

### Evaluation Criteria

Elements which must be considered when assessing a licensee's performance in a functional area.

- a. The evaluation criteria are as follows:
  1. Management involvement in assuring quality.
  2. Approach to resolution of technical issues from safety standpoint.
  3. Responsiveness to NRC initiatives.
  4. Enforcement history.
  5. Reporting and analysis of reportable events.
  6. Staffing (including management).
  7. Training effectiveness and qualification.
- b. Guidance for using these criteria to arrive at a category assignment is found in the Appendix to this Chapter.



# EVALUATION CRITERIA WITH ATTRIBUTES FOR ASSESSMENT OF LICENSEE PERFORMANCE

## 1. MANAGEMENT INVOLVEMENT AND CONTROL IN ASSURING QUALITY

<u>Category 1</u>	<u>Category 2</u>	<u>Category 3</u>
consistent evidence of prior planning and assignment of priorities; well stated, controlled and explicit procedures for control of activities	evidence of prior planning and assignment of priorities; stated, defined procedures for control of activities	little evidence of prior planning and assignment of priorities; poorly stated or ill understood procedures for control of activities
well stated, disseminated and understandable policies	adequately stated and understood policies	poorly stated, poorly understood or non-existent policies
decision making consistently at a level that ensures adequate management review	decision making usually at a level that ensures adequate management review	decision making seldom at a level that ensures adequate management review
corporate management frequently involved in site activities	corporate management usually involved in site activities	corporate management seldom involved in site activities
audits complete, timely and thorough	audits generally complete, and thorough	audits frequently not timely, incomplete or not thorough
committees properly staffed and functioning in almost all cases	committees usually properly staffed and functioning	committees not properly staffed or functioning
reviews timely, thorough and technically sound	reviews generally timely, thorough and technically sound	reviews not timely, thorough or technically sound
records complete, well maintained and available	records generally complete, well maintained and available	records not complete, not well maintained or unavailable
procedures and policies strictly adhered to	procedures and policies rarely violated	procedures and policies occasionally violated
corrective action systems promptly and consistently recognize and address non-reportable concerns	corrective action systems generally recognize and address non-reportable concerns	corrective action systems rarely recognize and address non-reportable concerns
procurement well controlled and documented	procurement generally well controlled and documented	repetitive breakdown in procurement control
design well controlled and verified	rare breakdowns of minor significance in design control or verification	repetitive breakdown in designs control or verification

## 2. APPROACH TO RESOLUTION OF TECHNICAL ISSUES FROM A SAFETY STANDPOINT

<u>Category 1</u>	<u>Category 2</u>	<u>Category 3</u>
clear understanding of issues demonstrated	understanding of issues generally apparent	understanding of issues frequently lacking
conservatism routinely exhibited when potential for safety significance exists	conservatism generally exhibited	meets minimum requirements
technically sound and thorough approaches in almost all cases	viable and generally sound and thorough approaches	often viable approaches, but lacking in thoroughness or depth
timely resolutions in almost all cases	generally timely resolutions	resolutions often delayed

## 3. RESPONSIVENESS TO NRC INITIATIVES

<u>Category 1</u>	<u>Category 2</u>	<u>Category 3</u>
meets deadlines	generally timely responses	frequently requires extensions of time
timely resolution of issues	few longstanding regulatory issues attributable to licensee	longstanding regulatory issues attributable to licensee

technically sound and thorough responses in almost all cases  
acceptable resolutions proposed initially in most cases

viable and generally sound and thorough responses  
acceptable resolutions generally proposed

often viable responses, but lacking in thoroughness or depth  
considerable NRC effort or repeated submittals needed to obtain acceptable resolutions

#### 4. ENFORCEMENT HISTORY

##### Category 1

major violations are rare and are not indicative of programmatic breakdown  
minor violations are not repetitive and not indicative of programmatic breakdown  
corrective action is prompt and effective

##### Category 2

major violations are rare and may indicate minor programmatic breakdown  
multiple minor violations or minor programmatic breakdown indicated  
corrective action is timely and effective in most cases

##### Category 3

multiple major violations or programmatic breakdown indicated  
minor violations are repetitive and indicative of programmatic breakdown  
corrective action is delayed or not effective

#### 5. REPORTING AND ANALYSIS OF REPORTABLE EVENTS

##### Category 1

events promptly and completely reported  
events are properly identified and analyzed  
corrective action is effective as indicated by lack of repetition

##### Category 2

events are reported in a timely manner, some information may be lacking  
events are accurately identified, some analyses are marginal  
corrective action is usually taken but may not be effective as indicated by occasional repetition

##### Category 3

event reporting is frequently late or incomplete  
events are poorly identified or analyses are marginal, events are associated with programmatic weaknesses  
corrective action is not timely nor effective, events are repetitive

#### 6. STAFFING (INCLUDING MANAGEMENT)

##### Category 1

positions are identified, authorities and responsibilities are well defined  
vacant key positions are filled on priority basis  
staffing is ample as indicated by control over backlog and overtime

##### Category 2

key positions are identified, and authorities and responsibilities are defined  
key positions usually filled in a reasonable time  
staffing is adequate, occasional difficulties with backlog or overtime

##### Category 3

positions are poorly identified, or authorities and responsibilities are ill-defined  
key positions are left vacant for extended periods of time  
staffing is weak or minimal as indicated by excessive backlog and overtime

#### 7. TRAINING AND QUALIFICATION EFFECTIVENESS

##### Category 1

training and qualification program makes a positive contribution, commensurate with procedures and staffing, to understanding of work and adherence to procedures with few personnel errors  
training program is well defined and implemented with dedicated resources and a means for feed back experience; program is applied to nearly all staff

##### Category 2

training and qualification program contributes to an adequate understanding of work and fair adherence to procedures with a modest number of personnel errors  
a defined program is implemented for a large portion of the staff

##### Category 3

training and qualification program is found to be the major contributing factor to poor understanding of work, as indicated by numerous procedure violations or personnel errors  
program may be either lacking, poorly defined, or ineffectively applied for a significant segment of the staff

Criteria for Use in Evaluating Training Functional Area

Category 1

management frequently involved in review of training activities

acceptable resolution to NRC training initiatives proposed initially in most cases

few significant events have occurred that are indicative of a training deficiency

Category 2

management occasionally involved in review of training activities

acceptable resolution generally proposed

occasional significant events have occurred that are indicative of a training deficiency

Category 3

management seldom involved in review of training activities

considerable NRC effort needed to obtain acceptable resolutions

frequent significant events have occurred that are indicative of a training deficiency

### Performance Categories

A rating of licensee performance in a given functional area.

a. Category 1

Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used so that a high level of performance with respect to operational safety or construction is being achieved.

b. Category 2

NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and reasonably effective so that satisfactory performance with respect to operational safety or construction is being achieved.

c. Category 3

Both NRC and licensee attention should be increased. Licensee management attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appear to be strained or not effectively used so that minimally satisfactory performance with respect to operational safety or construction is being achieved.

# EVALUATION MATRIX FOR OPERATING

## PHASE FUNCTIONAL AREAS

	Management Involvement in Assuring Quality	Approach to Resolution of Technical Issues from a Safety Standpoint	Responsiveness to NRC Initiatives	Enforcement History	Reporting and Analysis of Reportable Events	Staffing (Including Management)	Training and Qualification Effectiveness
Plant Operations							
Radiological Controls							
Maintenance							
Surveillance							
Fire Protection							
Emergency Preparedness							
Security							
Refueling							
Quality Programs and Administrative Controls							
Licensing Activities							
Engineering & Construction							
Training							

## Sample Performance Analysis

### Fire Protection

#### 1. Analysis

During the current SALP assessment period 2 inspections totaling 87 hours of direct inspection effort were applied in the area of fire protection at San Onofre Units 1, 2, and 3. In addition the resident inspectors provided continuing observations in this area. Three violations were identified as follows:

- ° Failure to provide indication of reactor coolant cold leg temperature on the essential plant parameter monitor panel which is used if a fire makes the control room unavailable (Units 2 & 3).
- ° Failure to wrap redundant equipment power cables found to be within 20 feet of each other with a one-hour rated fire resistant material (Unit 3).
- ° Failure to provide required fire protection for safe shutdown equipment (Unit 3).

The above violations were corrected in a timely manner.

The licensee has demonstrated aggressive management involvement in this area by the aggressive pursuit of a complete review of the Fire Hazards Analysis (FHA). This review consisted of a verification of plant conformance to this document and a comprehensive review of this document for conformance to NRC requirements. This activity has been essentially completed for Units 2&3 with the submittal of the revised document to NRR for approval. In addition, as a result of this work, 5 LERs were identified which covered a number of cases wherein plant configuration was not consistent with the FHA or NRC requirements. The licensee is currently doing a similar effort on Unit 1.

The licensee's staffing in this area appeared adequate and included a large number of fire patrol personnel, a station fire brigade, and an adequate management staff.

The training in this area was adequate and the fire watch personnel appeared alert, knowledgeable and responsible. The station has its own fire department which has been at the station all year. The licensee's reporting of fire protection system discrepancies appeared aggressive.

The licensee did have several LER's in this area - 21 on Unit 2, 3 on Unit 3 and 0 on Unit 1. Of these, three were caused by personnel error, three were caused by defective procedure,

three were caused by component failure, and seven were caused by design manufacturing or installation error. These LER's appear to result in part due to a large amount of retrofit work and the FHA review.

2. Conclusion

Overall the licensee's performance in this areas has been aggressive and responsive to NRC concerns; however, due to the number of violations in this area, the failure on occasion to perform required surveillances, the failure to ensure compensation measures on occasion and the failure to ensure configuration conformance to the FHA and NRC requirement during initial construction on Units 2&3, this area is evaluated Category 2.

3. Board Recommendation

The licensee should aggressively pursue the completion of the FHA evaluation on Unit 1 and should continue to emphasize fire protection, particularly in light of the extensive retrofit work.